

**REMARKS**

Claims 1-19 are pending after entry of this paper. Claims 1-19 have been rejected.

Claims 5 and 18 have been amended. Support may be found throughout the instant specification. No new matter has been introduced by these amendments.

Reconsideration and withdrawal of the pending rejections are respectfully requested.

**Response to Claim Objections**

The Examiner has objected to claims 5 and 6, and has interpreted the claims as reciting “ $\mu$ m” instead of “pm.” Claims 5 and 18 have been appropriately corrected to recite “ $\mu$ m.”

**Response to Rejections under 35 U.S.C. §103**

The Examiner has rejected claims 1-4, 7, and 14-17 under 35 U.S.C. §103(a) for allegedly being obvious over U.S. Patent No. 5,487,819 (“Everett”) alone. Applicants respectfully disagree, for the reasons set forth below.

Everett is directed to the recovery of metals from sulfide concentrates in a chloride milieu. After the leaching stage, the solution contains copper and potentially a variety of other valuable metals (*e.g.*, silver, arsenic, or zinc). Everett discloses a process for removal of silver which “involves the low current density electrowinning on a high surface area cathode,

preferably of titanium, with the addition of ionic mercury” (col. 12, lines 1-6, emphasis added, see also Example 5). Everett teaches that the electrolysis cell in this step “includes a copper anode surrounded by a cylindrical titanium mesh cathode” (col. 12, line 18-20). The Cu/Hg/Ag amalgam forms on the cathode (col. 12, lines 4-5). Everett further discloses that the amalgam is then dissolved in the anolyte stream (col. 12, line 7) and that silver chloride is subsequently precipitated (col. 12, line 11-12).

On page 3 of the Office Action, the Examiner specifically states the following regarding Everett:

A Cu/Hg/Ag amalgam forms on a titanium cathode (column 16, lines 48-53). The anode can be granular or briquetted copper (column 12, lines 21 and 22).

The Examiner implies that this disclosure of Everett meets the element of “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1.

Applicants respectfully disagree. In the first instance, Everett is clear that the generated amalgam forms on the cathode and not the copper anode. Everett thus fails to teach that the silver amalgam ends up on “a surface of fine-grained copper” as required by claim 1. Secondly, the forming of an amalgam by electrowinning with the addition of mercury is a process step that is separate and distinct from “precipitating a generated silver amalgam” as required by claim 1. Applicants respectfully assert that one of ordinary skill in the art would appreciate that precipitating is a much simpler process step than electrowinning. Indeed, there is no teaching or suggestion anywhere in Everett of “precipitating a generated silver amalgam onto a surface of fine-grained copper.”

Thus, although the Examiner is correct that Everett does disclose “forming a Cu/Hg/Ag amalgam on the cathode,” Everett does not disclose “precipitating a generated silver

amalgam onto a surface of fine-grained copper” as recited in claim 1. In light of the foregoing, applicants respectfully request reconsideration and withdrawal of the rejection over Everett.

The Examiner has rejected dependent claims 5, 6, 18, and 19 under 35 U.S.C. §103(a) for allegedly being obvious over Everett in further view of U.S. Patent No. 4,124,379 (“Peters et al”) and the “Grit and Microgrit Grading Conversion Chart” (“Chart”). The Examiner contends that Everett discloses the invention substantially as claimed (page 4 of the Office Action). Applicants respectfully disagree, for the reasons set forth above. Furthermore, applicants assert that neither Peters et al nor the Chart remedy the deficiencies of Everett, namely that Everett does not disclose “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in independent claim 1, from which claims 5, 6, 18, and 19 depend.

The Chart is merely a size conversion chart, and is not relevant to the below discussion as it discloses nothing about silver recovery.

Peters et al is described at page 3, lines 10-20 of the specification as originally filed. Peters et al discloses a process for recovering silver from a cuprous chloride solutions by “contacting the solution with amalgams of various metals from groups 2*b*, 4*a*, 5*a*, or 8*b* of the periodic table or copper to replace the metal in the amalgam with silver” (col. 1, lines 58-61). Specifically, Peters et al discloses recovering silver by contacting the solution with a copper amalgam that is either a free-flowing copper amalgam (0.1-0.5% Cu) or a high percent amalgam (~90% Cu) (col. 4, lines 49-54). Peters et al states that the high percent amalgam is “essentially [a] copper shot coated with mercury” (col. 4, lines 53-54).

In any case, Peters et al does not teach or suggest “precipitating a generated silver amalgam onto a surface of fine-grained copper.” Firstly, “fine-grained copper” is not the

substrate described in Peters et al for the recovery of silver; rather, Peters et al uses a free-flowing copper amalgam for this purpose. Secondly, Peters et al does not disclose “precipitating a generated silver amalgam” at all; rather, Peters et al discloses replacing the metal in the amalgam with silver.

Thus, Peters et al does not remedy the deficiencies of Everett, and as such the combination of Everett and Peters et al does not teach “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1.

The Examiner has rejected dependent claims 8, 9, 12, and 13 under 35 U.S.C. §103(a) for allegedly being obvious over Everett in further view of U.S. Patent No. 4,666,514 (“Bertha”). The Examiner again contends that Everett discloses forming a Cu/Hg/Ag amalgam on the cathode (page 4 of the Office Action), and thus implies that this disclosure meets the element of “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1. Applicants disagree for the above reasons. Furthermore, applicants assert that Bertha does not remedy the deficiencies of Everett, namely that Everett does not disclose “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in independent claim 1, from which claims 8, 9, 12, and 13 depend.

Bertha is directed to a hydrometallurgical process for recovering silver from copper electrolysis anode sludge (title, abstract). Bertha discloses that the anode sludge is subjected to chlorination by hypochlorite in the presence of hydrochloric acid to decompose insoluble selenides, tellurides, and other compounds (col. 3, lines 10-13). Bertha does not disclose silver removal as silver amalgam, nor does Bertha disclose mercury at all.

As such, Bertha in no way remedies the deficiencies of Everett, at least because Bertha does not disclose silver amalgams. Thus, the combination of Everett and Bertha does not teach “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1.

The Examiner has rejected dependent claims 8, 10, 12, and 13 under 35 U.S.C. §103(a) for allegedly being obvious over Everett in further view of U.S. Patent No. 4,670,052 (“Stanley et al”). The Examiner again contends that Everett discloses forming a Cu/Hg/Ag amalgam on the cathode (page 5 of the Office Action), and thus implies that this disclosure meets the element of “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1. Applicants disagree for the above reasons. Furthermore, applicants assert that Stanley et al does not remedy the deficiencies of Everett, namely that Everett does not disclose “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in independent claim 1, from which claims 8, 10, 12, and 13 depend.

Stanley et al is directed to a process for gold recovery from a precious metal sludge bearing concentrate, where silver is removed from the leach slurry as insoluble silver chloride. Stanley et al does not disclose silver removal as silver amalgam, nor does Stanley et al disclose mercury at all.

As such, Stanley et al in no way remedies the deficiencies of Everett, at least because Stanley et al does not disclose silver amalgams. Thus, the combination of Everett and Stanley et al does not teach “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1.

The Examiner has rejected dependent claims 8 and 11-13 under 35 U.S.C. §103(a) for allegedly being obvious over Everett in further view of Derwent Acc-No. 1983-789093 (GB 2118536, “Derwent”). The Examiner again contends that Everett discloses forming a Cu/Hg/Ag amalgam on the cathode (page 6 of the Office Action), and thus implies that this disclosure meets the element of “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1. Applicants disagree for the above reasons. Furthermore, applicants assert that Derwent does not remedy the deficiencies of Everett, namely that Everett does not disclose “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in independent claim 1, from which claims 8 and 11-13 depend.

Derwent is directed to a method in which a sludge containing lead, antimony, and silver is leached with hydrochloric acid with the aid of oxygen injection. Derwent does not disclose silver removal as silver amalgam, nor does Derwent disclose mercury at all.

As such, Derwent in no way remedies the deficiencies of Everett, at least because Derwent does not disclose silver amalgams. Thus, the combination of Everett and Derwent does not disclose “precipitating a generated silver amalgam onto a surface of fine-grained copper” as recited in claim 1.

### Dependent Claims

Applicants have not independently addressed all of the rejections of the dependent claims. Applicants submit that for at least similar reasons as to why independent claim 1 from which all of the dependent claims 2-19 depend are believed allowable as discussed *supra*, the dependent claims are also allowable. The applicants however, reserve the right to address any

individual rejections of the dependent claims and present independent bases for allowance for the dependent claims should such be necessary or appropriate.

Thus, applicants respectfully submit that the invention as recited in the claims as presented herein is allowable over the art of record, and respectfully request that the respective rejections be withdrawn.

### **CONCLUSION**

Based on the foregoing amendments and remarks, applicants respectfully request reconsideration and withdrawal of the rejection of claims and allowance of this application. Favorable action by the Examiner is earnestly solicited.

In the event that an interview would be helpful in advancing prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number below.

**AUTHORIZATION**

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. **13-4500**, Order No. 4819-4740.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. **13-4500**, Order No. 4819-4740.

Respectfully submitted,  
MORGAN & FINNEGAN, L.L.P.

Dated: January 31, 2008

By: /Andrew D. Cohen/  
Andrew D. Cohen  
Registration No. 61,508

Correspondence Address:  
MORGAN & FINNEGAN, L.L.P.  
3 World Financial Center  
New York, NY 10281-2101  
(212) 415-8700 Telephone  
(212) 415-8701 Facsimile